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ABSTRACT

A study investigated the writing strategies used by English as a second language (ESL) students in writing electronic mail (e-mail) messages, and to what extent certain ESL teaching variables influenced students' use of writing strategies. Subjects were 16 ESL teachers and their 208 university students. Students were administered a 50-item Likert-type inventory of e-mail writing strategies (cognitive, metacognitive, social, and affective). Teachers were administered questionnaires concerning their teaching approaches for e-mail writing. Results indicate significant negative differences between students' use of communication strategies and these teaching variables: degree of teacher involvement in the e-mail project; the teacher's expectation of the formality of students' e-mail writing styles; and the degree to which the e-mail grading affected the final grade. Recommendations are made for ways to integrate e-mail writing into ESL classrooms and to foster students' conscious understanding of the use of various writing strategies. (Contains 25 references.) (MSE)

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The Effects of Teaching Approaches on Student's Writing Strategies in the E-mail Settings

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The effects of teaching approaches on student's writing strategies in the e-mail settings

Yu-Chih Sun, Ph.D.

ABSTRACT

With the advent of Internet technology, e-mail has been popularized and well-received by language learners and classroom teachers as a tool to enhance writing proficiency. The current study aimed to assess ESL student's e-mail writing strategies and to examine, to what extent, the selected teaching variables influence the students' use of e-mail writing strategies. A 50-item 5-point Likert scale self-report instrument, Strategy Inventory for E-mail Writing (SIEW), was derived to measure students' e-mail writing strategies. The instrument was based on four psychometric functions; namely, (1) cognitive strategies, (2) metacognitive strategies, (3) social strategies, and (4) affective strategies. Questionnaires for ESL teachers were also developed to identify selected teaching approach characteristics. The instruments were then administered to 16 ESL teachers and their 208 students who were enrolled in ESL programs in academic universities.

The results of the study show that negative and significant differences were found between students' use of communication strategies and the following teaching variables: (1) the degree of teacher involvement in the e-mail project, (2) the teacher's expectation on the formality of students' e-mail writing styles, and (3) the degree of e-mail grading.

Based on the results from this study, discussions and recommendations were made as to ways to integrate e-mail into ESL classrooms and to foster students' conscious understanding of students' use of a variety of e-mail writing strategies.

INTRODUCTION

In recent years, the field of second language education has been energized by the advances and growing popularity of Internet technology. Among those various Internet resources, such as the World-Wide-Web (WWW), electronic mail (e-mail), discussion groups, and newsgroups, e-mail is a medium that has been well-received by ESL (English as a Second Language) educators and learners. The importance of introducing students to e-mail is highlighted by the growing number of studies reporting substantial benefits on using e-mail as a means of teaching general courses (Bull, Harris, Lloyd, & Short, 1989; Elasmar & Carter; 1996; Kinkead, 1987; Cooper and Selfe, 1990; and Harris, 1995), specifically for EFL (English as a

foreign language) education (Suozzo, 1995; Chun, 1994; Lunde, 1990), and teaching English as a Second Language (Soh and Soon, 1991; Goodwin, Hamrick, and Stewart, 1993; Meagher, 1995; Kang and Dennis, 1995; Warschauer, 1995; Wang, 1993). It has become clear over the past few years that e-mail seems to be an ideal tool for second/foreign language teaching and learning and has already changed the dynamic of language teaching and learning.

E-mail communication has provided some unique features that rarely happen in the traditional writing classroom. For example, e-mail provides students with opportunities to perform a great variety of communication with meaningful purpose and authentic audiences. The function coincides with the recent shift in focus from the product-oriented writing approach to the process-oriented writing approach in English as a first language and in second language disciplines (Kinkead, 1987; Warschauer, 1995; Dam, 1990; Sommers, 1980; Zamel, 1983). This shift of paradigm from product to process was prompted by the realization that the purpose of writing is for real and purposeful communication and for the interchange of ideas, instead of focusing on grammar drills, correctness, and usage of form. E-mail in this sense provides a great forum for purposeful and authentic communication opportunities.

Even though e-mail has become a new trend in the ESL field and has been well-received by students and teachers, researchers and classroom teachers have found that with all the excellent features of e-mail, it does not guarantee the effectiveness of learning. It not only depends on how students deal with the new technology, but also on how the e-mail technology is integrated into the classroom. Most research on the educational use of e-mail in second language education has been focusing on the discourse analysis of students' e-mail entries and often views e-mail communication as a tool that emphasizes the writing product, rather than as a tool to explore the writing process. There has been little research, if any, concerning the direct examination of writing strategies used by ESL students in their e-mail writing process. Even less is understood about how different e-mail teaching approaches and teachers' perspectives on e-mail writing will impact the students' choice of e-mail writing strategies.

For the above mentioned reasons, the purpose of this study was to identify the writing strategies used by ESL students in the e-mail setting and determine variables affecting students' choice of e-mail writing strategies. In particular, this study was undertaken to address the following research questions: (1) What are the e-mail writing strategies used by ESL students in the study? (2) To what extent do ESL students' e-mail writing strategies differ with respect to the following ESL teacher variables: (a) teachers' expectations toward the formality of students' e-mail writing styles, (b) degree of involvement in the e-mail project, (c) degree of e-mail grading,

and (d) the perception of the effectiveness of e-mail writing? Through the identification and investigation of e-mail writing strategies used by ESL students and the influence of teaching approaches on the students e-mail writing process, the study can shed light on the process that ESL students undergo in their e-mail writing and hopefully will open up a new area for the integration of e-mail technology into ESL classrooms.

METHODOLOGY

Subjects

The subjects of this study were 16 ESL teachers and their 208 ESL students who were enrolled in ESL programs in academic settings in the United States where e-mail was incorporated into their writing classrooms. Subjects were located by posting messages requesting participants to ESL teachers via listserv discussion lists (Neteach-L, TESL-L, TWO-L, ED-NET, and IECC-Discussion) and writing to presenters listed on the TESOL program books and the book contributors of Virtual Connection. Questionnaires were then sent to those ESL teachers who agreed to participate in the study. Each teacher filled out one questionnaire for themselves and administered the SIEW instruments to their students.

Instrument Development

Self-report questionnaires were chosen as a data-collection instrument in this study and data analysis was conducted based on the information collected. The following two questionnaires were developed to measure selected student and teacher variables.

STRATEGY INVENTORY FOR E-MAIL WRITING

In this study, the Strategy Inventory for E-mail Writing (SIEW) derived by the researcher was performed to measure the use of e-mail writing strategies by ESL students. SIEW (see Appendix) is a self-report 5-point Likert scale with 50 items. Respondents must rate their frequency of use of e-mail writing strategies, ranging from (1) rarely or never to (5) always. This questionnaire was designed to assess the frequency with which learners use various writing strategies. Items on the survey were developed based on an extensive literature review of the following areas: ESL writing strategies, e-mail communication in ESL settings, and second language learning strategies.

The SIEW was categorized into the following four pyschometric subgroups: (1) cognitive strategies (item 1-9) for using all one's mental processes in planning, composing, and revising, (2) metacognitive strategies (item 10-31) for organizing and evaluating one's learning, (3) affective strategies (item 32-40) for managing one's emotions, and (4) social strategies (item

41-50) for learning with others. Efforts were made to minimize the possibility that students would give socially desirable answers, by implementing anonymity of the survey and the inclusion of reverse-coded questions. The items scored in reverse were numbers 9, 42, 44, 48, and 50.

QUESTIONNAIRE FOR TEACHING APPRAOCH IN E-MAIL SETTINGS

A questionnaire with regard to teacher's perception and approach toward integrating e-mail into their writing classroom was also derived in order to better understand the application of e-mail in the particular writing classroom settings. Questions illustrated in this section included: (1) types of e-mail projects used in the writing classroom, (2) teacher's expectations toward the formality of students' e-mail writing styles, (3) teacher's involvement in the e-mail projects, (4) evaluation or grading policy on students' e-mail projects, and (5) teacher's perspectives of the effectiveness of the e-mail medium. A teacher's expectations of the formality of students' e-mail writing style was defined as expecting students to write e-mail messages as carefully as they would for classroom writing assignments, using contractions, emotive icons, abbreviations, and checking spelling, grammar, and the flow of meaning. Teacher's involvement in students' e-mail writing was defined as reading students' e-mail entries, assigning the students' topics for e-mail entries, providing feedback on e-mail entries, or modeling the e-mail writing process for the students. Evaluation or grading policy is defined as to what percentage the e-mail project counted toward students' final grade.

Pilot Testing

Two pilot tests were performed before conducting the formal survey in order to identify the problematic items and verify the reliability and validity of the instrument. For the first pilot study, opinions concerning the questionnaire were solicited from dissertation committee members, professors in related fields, ESL teachers, statisticians, ESL students, and ESL professionals on Internet discussion groups. Data was collected through face-to-face discussions, postal mailing exchanges, e-mail or web page correspondence, or phone discussions. Appropriate revisions of the questionnaire were made based on the suggestions and comments solicited from the first pilot test. The purpose of the second pilot test was aimed to test the reliability and validity of the instrument in order to ensure that the questionnaire was valid and reliable. The subjects of the second pilot test were 51 ESL students in a mid-west academic university. Data was collected through sending SIEW to participants via postal mail or e-mail. The SIEW shows adequate internal consistency of .90 with Cronbach alpha coefficient. The content validity of this survey was examined by professionals in this field and having two experts blind match each

questionnaire item with its original subscales of item development. The report content validity of SIEW was .94, which is also considered to be very high.

RESULTS

Data Analysis

The quantitative analysis of the data was done by using the Statistical Package for Social Science (SPSS) 8.0 for Windows. The primary statistical techniques used in this research included (1) descriptive analysis, (2) principal component factor analysis, and (3) analysis of Variance, including MANOVA, ANOVA, and post hoc comparison.

Descriptive Analysis of the SIEW

Descriptive analysis of the subjects' responses to the SIEW were performed to examine the strategies which were most or least frequently used by learners of English as a Second Language. In general, high means are considered to be in the range of 3.5 to 5.0, medium 2.5 to 3.4, and low 1.0 to 2.4. The overall frequency of e-mail writing strategy (the overall SIEW mean) was 3.38, which indicated moderately high usage of e-mail writing strategies by this sample. The majority of the subjects (59.1%) were moderate strategy users (M=2.5 to 3.4), 38.9 percent of them were high strategy users (M=3.5 to 5.0), and only 1.9 percent of them were low strategy users (M=1 to 2.4). Table 1 shows the mean of each subgroup and its rank in frequency of strategy use.

TABLE 1
Mean, Standard Deviation and Ranking of SIEW

Strategies	Mean	SD	Rank
Cognitive Strategies	3.11	.56	4
Metacognitive Strategies	3.60	.66	2
Social Strategies	3.66	.68	1
Affective Strategies	3.17	.50	3

Factor Analysis of the Strategy Inventory for E-mail Writing

A principal components factor analysis was performed on the SIEW scores for the 208 ESL students to identify the main factors that would account for the greatest amount of variation among the students' responses. Fourteen factors with eigenvalues greater than one emerged and accounted for 65.13 % of the total variance. Six factors were retained based on the review of the related literature and professional judgement. The varimax rotation was performed to simplify each column of the factor matrix. Table 2 summarizes the six factors, the average

frequency of the use of strategies associated with each factor and the rank order of usage. The factors are statistically uncorrelated with each other since the Varimax uses an orthogonal rotation among these factors. Factor 2 (communication strategies) was most frequently used by the subjects, closely followed by Factor 4 (affective strategies), whereas Factor 1 (planning, organizing, and revising strategies) was least frequently used. There are five items cross-loaded in the factor analysis, and all of them are between Factors 1, 2, and 3. It illustrated the independence of each factor. In the following data analysis, in order to be identified as a factor, each factor needed to have more than 3 items. Therefore, only Factors 1 to 5 were included in the analysis.

TABLE 2
Factors and Frequency

Strategies	Mean	Rank
Factor 1: Planning and arranging strategies	3.21	6
Factor 2: Communication strategies	3.81	1
Factor 3: Monitoring strategies	3.40	4
Factor 4: Affective strategies	3.77	2
Factor 5: Social strategies	3.32	5
Factor 6: Problem solving strategies	3.47	3

Teaching Approaches and Teacher's Attitudes

A one-way Multivariate Analysis of Variance (MANOVA) was performed to determine the effects of the four types of teaching variables (teacher's expectations on the formality of e-mail writing, teacher's involvement in the e-mail project, grading system, and perception of the effectiveness of the e-mail medium) on the five dependent variables (Factor 1 to Factor 5). The results of the MANOVA are as follows: (1) teacher's expectations on students' e-mail writing, $p=.169$; (2) teacher's involvement in students' e-mail writing, $p=.011$*; (3) grading, $p=.077$; and (4) teacher's attitude toward the effectiveness of the e-mail writing, $p=.080$. Only teacher's involvement in students' e-mail writing showed significant differences on the set of the five factors at the .05 level. Since all the four teaching variables were highly related to each other, variables for which the MANOVA yielded a nonsignificant F ration were also included in the univariate ANOVAs as follow-up tests. Each ANOVA was tested at the .05 level. The results of the ANOVAs are shown in Table 3.

TABLE 3
Significant Effects of Teaching Variables on Factors

Factors*					
Variables	1	2	3	4	5
Teacher's expectation	.81	5.25*	.05	.09	1.65
Involvement	.23	9.29*	.31	.02	5.19*
Grading	3.20	7.42*	1.82	.71	.11
Effectiveness of e-mail writing	.21	1.97	1.47	.22	4.93*

Note: Significant levels below .05 are shown in this Table.
a 1. Planning and arranging strategies
2. Communication strategies
3. Monitoring strategies
4. Affective strategies
5. Social strategies
*p<.05 **p<.01 ***p<.001

Formality of Students' E-mail Writing Styles

The results of MANOVA indicated that the Wilks' Lambdas Λ of .963 was not significant, F (5, 202)=1.573, p=.169, indicating that we could not reject the hypothesis that the population means on the dependent variables were the same for the five e-mail writing strategies used. The multivariate $\eta 2$ =.037 was reported following the significance test.

One-way ANOVAs on each dependent variable were conducted as follow-up tests to the MANOVA. Using the Bonferoni method, each ANOVA was tested at the .05 level. The results reported significant differences among two levels of teacher's expectation on the formality of students' e-mail writing styles and communication strategies used, with F (1, 206)=5.246, p=.023, $\eta 2$ =.025. The results show that the teachers' expectations on the formality of students' e-mail writing had a differential effect on the students' choice of communication strategies in the e-mail writing process. That is, the lower the teachers' expectations of students' formality of e-mail writing styles was, the more communication strategies the students tended to use.

Teachers' Involvement in the E-mail Activity

The results of MANOVA indicated that the Wilks' Lambdas Λ of .929 was significant, with F (5, 202)=3.0811, p=.011. The multivariate $\eta 2$ =.071 was reported following the significance test. A one-way ANOVA on each dependent variable was conducted as follow-up tests to the MANOVA. Each ANOVA was tested at the .05 level. The results reported significant differences among two levels of teacher's involvement in students' e-mail writing and Factor 2 (communication strategies), F (1, 206)=9.290, p=.003, $\eta 2$ =.043, and Factor 5 (social strategies), F (1, 206)=5.187, p=.024, $\eta 2$ =.025. The results indicate that the teachers' involvement in students' e-mail writing had a differential effect on the students' choice of

communication strategies and social strategies in the e-mail writing process. The lower the teachers' involvement was, the more communication and social strategies the students tended to use.

E-mail project Evaluation

The results of MANOVA was not significant, with Wilks' Lambdas Λ of .952, F (5, 202)=2.021, p=.077. The multivariate $\eta 2$ =.048 was reported following the significance test. A one-way ANOVA on each dependent variable was conducted at the .05 level as follow-up tests to the MANOVA. The results reported significant differences among two levels of degrees to which e-mail writing contributed to the final grade. The ANOVA on the Factor 2 (communication strategies) was significant, F (1, 206)=7.417, p=.007, $\eta 2$ =.035. The results supported that the e-mail grading system had a differential effect on the students' choice of communication strategies in the e-mail writing process. That means, the more the e-mail counted toward final grade, the fewer communication strategies the students would tend to use.

Teachers' Perception of the Effectiveness of E-mail Writing

The results of MANOVA indicated that the Wilks' Lambdas Λ of .953 was not significant, F (5, 202)=1.998, p=.080. The multivariate $\eta 2$ =.047 was confirmed following the significance test. One-way ANOVAs on each dependent variable were tested at the .05 level as follow-up tests to the MANOVA. The results reported significant differences among two levels of teacher's perspectives on the effectiveness of e-mail writing and Factor 5. The ANOVA on the Factor 5 (social strategies) was significant, F (1, 206)=4.926, p=.028, $\eta 2$ =.023. The results indicated that the teachers' perspective on the effectiveness of e-mail writing had a differential effect on the students' choice of social strategies in the e-mail writing process. The lower the teachers' perception of the effectiveness of e-mail writing, the more social strategies students tended to use.

CONCLUSIONS

The findings of the study provided some interesting insights as to how various teaching approaches in integrating e-mail into the ESL classrooms had influence on students' use of e-mail writing strategies. The results showed that students' use of communication strategies were most sensitive to different teaching approaches and were negatively and significantly influenced by the following three teaching variables: (1) the teacher's expectation of formality of e-mail writing, (2) the teacher's involvement in students' e-mail project, and (3) the e-mail project grading system. The more formal and accurate the teachers expected their students to be in

writing their e-mail messages, the lower the frequency of use of communication strategies the students reported. One possible explanation could be that if teachers focused more on the product of the e-mail writing, or viewed e-mail writing as a product-oriented process, then, students would tend to cope with teachers' expectations by sacrificing their use of communication strategies.

Teacher's involvement in students' e-mail writing also had a negatively significant influence on students' communication and social strategy use. The results showed that the more involved the teacher was in students' e-mail writing, the fewer communication and social strategies the students would use. The possible explanations are threefold. First, the teacher's involvement in the e-mail projects will transfer the locus of responsibilities from students to teacher. As pointed out by Theodore (1996), students should be the worker in school rather than having teacher-as-deliverer-of-instructional-services. The teacher should play the role of a coach, and guide students to understand how they learn and teach themselves to become members of a community of learners. Therefore, in an e-mail project case, the more responsible the students are in their learning, the more strategies they will use to ensure the quality of their writing products. On the other hand, the more involved the teachers are, the less responsible the students need to be, and, thus, the fewer strategies the students would use. Second, the nature of the e-mail medium fosters authentic and purposeful communication. The involvement of the classroom teacher, such as in reading students' e-mail entries, assigning students topics for e-mail writing and providing feedback on students' e-mail messages, will inhibit students' motivation to be involved in real communication and, thus, make e-mail writing just a classroom assignment like a traditional writing assignment. Third, the teacher's involvement tends to be product-oriented, rather than process-oriented. The product-oriented writing approach tends to focus on the mechanical use of the language and loses the nature of communication in the e-mail setting.

The degree of grading in the e-mail project also had a negative and significant influence on students' frequency use of communication strategies. The more the e-mail writing project counts toward the students' final grade, the fewer communication strategies the students would use. The results of the study show that the process of judging itself will have some negative influence on students' learning. That is, grading interferes with true communication, especially when someone is trying to express themselves. As Lunde (1990) suggested, if e-mail is to be used as a tool to foster students' learning, it may be best to leave it out of the classroom environment since any evaluation or grading by an instructor may deter students from freely expressing themselves in the target language. In other words, when the teacher becomes the judge or the authority of assigning a grade for students' e-mail entries, it creates a hostile

tension between teacher and student and it will shift the students' motivation for e-mail writing from an integrative to an instrumental one. Thus, under such tension, students involve themselves in e-mail writing not because they want to communicate their ideas with others, but toward the avoidance of punishment such as receiving a poor grade in the course. In addition, when teachers correct everything, students may be faced with too many changes to absorb and incorporate. They may tend to sacrifice the communication, purpose, and creativity of writing for accuracy and lose their motivation toward writing (Barnet, 1989; Zamel, 1983). Overall, the grading system will shift the students' focus from what they want to do to what the teacher wants them to do and make e-mail writing just another type of traditional product-oriented classroom assignment.

Limitations of the Study

There are several limitations of this study. First, the instrument used to measure students' e-mail writing strategies in this study, the SIEW, is based on retrospective self-report. Research using a self-report questionnaire could have the following shortcomings: (1) students did not fully understand the nature of writing strategies and their own strategy use, hence were unable to respond to items accurately, (2) students did not respond with total honesty or were tired of answering so many questions, and (3) owing to the gap between the event and the report, subjects may not have reported some strategies they used, or they may have reported using strategies they did not demonstrate using. As mentioned by Oxford & Crookall (1989), Oxford (1990), and O'Malley & Chamot (1990), there is no way of identifying with absolute precision the nature of writing strategies, how many exist, or how they may be identified and categorized. Therefore, follow-up interviews with some participants might have provided a clearer picture of language learning strategies actually used. Secondly, the subjects chosen in the current study were limited to ESL students studying in the academic universities in the United States. Therefore, the results of this study might not be generalizable to EFL situations. Further research in using SIEW in the EFL environment would be highly recommended. Thirdly, since the SIEW instrument was written in English, it is possible that some participants did not fully understand the meaning of specific items. Thus, the language used in the instrument may have had an effect upon the results obtained.

Recommendations for Future Research

The effects of individual learner's use of strategies on achievement were not addressed in the present study. So, future research on the relationship between students' e-mail writing strategies and their writing performance (achievement) would be highly recommended. In addition, research on learning styles and choice of e-mail writing strategies is also worthy of

investigation by comparing different types of learning styles and writing strategies. Replication studies in EFL settings might also provide a fresh insight into the e-mail writing strategies area since e-mail writing might provide a stronger incentive and usefulness in countries where students have drastically fewer chances to meet with native speakers of English. It is of interest to know if the differences in the learning environment will have an impact on students' choices of e-mail writing strategies. Using SIEW with a different population would further our knowledge of its reliability and validity across populations, such as EFL students in non-English speaking countries or high school and adults ESL learners. Finally, there is a need to conduct research using other methods as well as the SIEW. Possible methods include think-aloud procedures, interviews, both individual and group interviews, and keeping learning journals. Multiple measurements of strategy use are expected to help identify so far unknown e-mail writing strategies, if any, used by ESL learners.

Pedagogical Implications

In summary, the use of electronic mail for ESL instruction does not, of course, replace formal classroom instruction, but instead complements it. E-mail is simply a modern communication tool that has the potential for use as an instruction aid. Using e-mail as a tool implies a pedagogical model that does not depend on the machine itself, but depends on the role of the teacher and his or her pedagogical philosophy (Trenchs, 1996). Incorporating e-mail into the classroom demands that the teacher maintains an appropriate balance between guidance and freedom.

The implications of this study on the role of the teacher might be surprising to some ESL teachers whose main daily struggle and preoccupation has traditionally been with teaching students the grammatically correct forms of the language. However, as suggested by the results of the study, the best way students learn to use and communicate in the target language is simply to have them communicate - to "learn by doing" (Hillesheim, 1993 - Dewey, 1916/1964). Teacher's involvement in the students' e-mail writing does not guarantee better strategy use on the students' part. On the contrary, real communication with real people is indeed the best situation in which we can put our students in the second language classroom. Learning by doing, or, in the second languages, learning by communicating in the target language, is a crucial part of the language learning process. E-mail communication creates a new teacher-student relationship. The students become more autonomous and the teacher becomes more of a facilitator. The teacher, in this sense, should be someone who directs the students' learning process with a specific purpose in mind and give students space to express their ideas and help the students to discover how to learn English and how to use e-mail technology more effectively.

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APPENDIX

Sample Questions from Strategy Inventory for E-mail Writing

COGNITIVE STRATEGIES

1. I organize my ideas when I compose e-mail messages.
2. I pay attention to the words and the style of native speakers' e-mail writing examples.
3. If I don't know how to express the meaning, I use a similar one or explain what I mean.

METACOGNITIVE STRATEGIES

4. I evaluate my progress in English e-mail writing.
5. I reread my e-mail message and check the flow of meaning before I send it.
6. I try to write more like native speakers.
7. I try to improve my writing by reading more.

SOCIAL STRATEGIES

8. I am willing to learn about other cultures through sharing with people via e-mail.
9. I seek out opportunities to exchange e-mail messages with others.
10. If I don't understand what people have written in an e-mail message, I ask them to explain.

AFFECTIVE STRATEGIES

11. I am afraid of making mistakes when I write e-mail messages.
12. I encourage myself to practice writing e-mail messages.
13. I believe writing e-mail messages often will improve my English writing.